CLAIMS

1. A method for non-contact determination of sought properties of an object to be measured (2), such as, for example, its geometrical dimension or is electrical conductivity, by using electromagnetic induction, and wherein an electromagnetic field is generated in a transmitter coil (3), placed on one side of the object to be measured (2), and wherein the magnetic field penetrating through the object to be measured (2) is detected by a receiver coil (4) placed on the other side of the object (2) to be measured, **characterized** by

- placing a control coil (5) near the transmitter coil (3),
- generating a change in the magnetic field of the transmitter coil (3),
- detecting the field change in the control coil (5),
- detecting the field change in the receiver coil (4),
- determining the difference in time for the detection of the field change in the control coil (5) and in the receiver coil (4), respectively,
- determining the time of penetration (T2) through the object (2) to be measured, and
- determining therefrom the thickness or electrical conductivity of the object (2) to be measured.

2. A method according to claim 1, **characterized** in that the control coil (5) is located on the same side as the transmitter coil (3) in relation to the object (2) to be measured.

3. A method according to claim 1 or 2, **characterized** in that the time of penetration (T2) through the object (2) to be measured is determined based on the time (t5) for detection of the field change in the control coil (5), and the time (t4) for detection of the field change in the receiver coil (4).

4. A method according to one or more of the preceding claims, **characterized** in that
the calculation of the delay time (T2) through the object (2) to be measured is equal to (t4ba+t4ab-t5aa-t5bb)/2.

5. A method according to one or more of the preceding claims, **characterized** in that
the voltage (S4) induced in the receiver coil (4) is measured at two different times after the magnetic field in the transmitter coil (3) has suddenly changed.

6. A method according to one or more of the preceding claims, **characterized** in that
the thickness or electrical conductivity of the object (2) to be measured is calculated on the basis of the time (tt) of penetration and the maximum voltage (S4max) induced in the receiver coil (4).

7. A method according to one or more of the preceding claims, **characterized** in that
the thickness or electrical conductivity of the object (2) to be measured is calculated on the basis of the reciprocal value of the product of the square of the maximum voltage (S4max) induced in the receiver coil (4) and the time of penetration (tt).

8. A method according to one or more of the preceding claims, **characterized** in that
the voltage (S4) induced in the receiver coil (4) is integrated and that the thickness or electrical conductivity of the object (2) to be measured is calculated on the basis of this integrated signal (S17).

9. A method according to one or more of the preceding claims, **characterized** in that
the voltage (S4) induced in the receiver coil (4) is integrated and that the thickness or electrical conductivity of the object (2) to be measured is calculated on the basis

of the value of this integrated signal (S17) at at least two different times.

10. A measuring device for non-contact determination of one or more sought properties of an object to be measured (2), such as, for example, its geometrical dimension or its electrical conductivity, comprising at least one transmitter coil (3) and at least one receiver coil (4) located spaced from each other, as well as means for generating a changeable magnetic field in the transmitter coil (3) and means for detecting a voltage (S4) induced in the receiver coil (4),
characterized in that
- a control coil (5) is arranged to detect a change in the magnetic field generated in the transmitter coil (3),
- means are arranged to detect the difference in time between the signals (S5 and S4) from the control coil (5) and the receiver coil (4) which are generated by the change in magnetic field in the transmitter coil (3),
- means (18, 19) are arranged to detect the maximum voltage (S4max) induced in the receiver coil (4), and that means are arranged to calculate, from these values, the thickness or electrical conductivity of the object (2) to be measured.

11. A measuring device according to claim 10,
characterized in that
the control coil (5) is arranged on the same side of the object (2) to be measured as the transmitter coil (3).

12. A measuring device according to claim 10 and/or 11,
characterized in that
an integrator (17) is arranged to integrate the voltage signal (S4) induced in the receiver coil (4).

13. A measuring device according to claims 10-12,
characterized in that

circuits (16-19) are arranged to measure the voltage (S4) induced in the receiver coil (4) at two different times after the time (t1) for interruption in the transmitter coil (3).

14. A computer program comprising data code for carrying out the method steps according to any of claims 1-8.

15. A computer-readable medium comprising at least part of the computer program according to claim 14.

16. A computer program according to claim 14 which is at least partly transmitted via a network such as, for example, the Internet.

17. Use of a device according to claims 10 - 13.